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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/677,537      | 10/03/2003  | Tetsujiro Kondo      | 243480US6           | 2304             |

22850 7590 11/14/2007  
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.  
1940 DUKE STREET  
ALEXANDRIA, VA 22314

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| EXAMINER |
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SMITH, JEFFREY S

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| ART UNIT | PAPER NUMBER |
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2624

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| NOTIFICATION DATE | DELIVERY MODE |
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11/14/2007

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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## Office Action Summary

Application No.

10/677,537

Applicant(s)

KONDO ET AL.

Examiner

Jeffrey S. Smith

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>5/07, 8/07</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, the difference between "an address corresponding to a feature value that is based on values of said each pixel and a plurality of pixels peripheral to each said pixel" and "an address corresponding to a feature of a target pixel" is unclear. If the address corresponding to a feature of a pixel is the same as the address corresponding to a feature value that is based on values of the pixel and a plurality of pixels peripheral to the pixel, then the claim should be amended to make this clear. If the address corresponding to a feature of the pixel is different than the address corresponding to a feature value that is based on values of the pixel and a plurality of pixels peripheral to the pixel, then the relationship between the storing means and the first detecting means is unclear.

Claims 2 and 3 are also unclear for these reasons.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory

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obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-3 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-35 of copending Application No. 10/490,208 ("208") in view of U.S. Patent Number 7,245,774 issued to Kondo ("Kondo").

Claim 16 of the '208 application discloses "a storage means for storing, for each of said second data, position information of said second data at a feature address corresponding to a feature of each of said second data," which is the same as "storing means for storing position information of each pixel of a first frame that is earlier in time than a second frame at an address corresponding to, not position information of said second data, but a feature value that is based on values of said pixel and a plurality of pixels peripheral to said each pixel" as recited in claim 1 of the current application.

Claim 16 of the '208 application also recites "a motion vector calculation means for obtaining the position information of said second data corresponding to said focused

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data by reading the position information of said second data stored in said storage means at a feature address corresponding to said feature of said focused data, and calculating a motion vector of said focused data by using position information of said focused data and the obtained position information of said second data," which reads on "first detecting means for detecting the position information stored at an address corresponding to a feature of a target pixel of a second frame, and second detecting means for detecting a motion vector of the target pixel from the position of the target pixel."

Kondo discloses determining a centroid and detecting a motion vector from the position of the target pixel and the centroid as shown in figure 5.

It would have been obvious to one of ordinary skill in the art at the time of invention to modify claim 16 of the '208 application to include determining the centroid and detecting the motion vector from the position of the target pixel and the centroid for the benefit of reducing the amount of calculation needed for block matching as taught by Kondo in column 1.

Claims 2-3, which have similar elements, are also rejected for these reasons.

This is a provisional obviousness-type double patenting rejection.

Claims 1-3 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-37 of copending Application No. 10/490,855 ("855") in view of U.S. Patent Number 7,245,774 issued to Kondo ("Kondo").

Claim 20 of the '855 application recites "a storage means for storing positional information of said second image data at positions specified by a plurality of addresses corresponding to said respective features of said second image data and value in the vicinity of said feature," which corresponds to the storing means of claim 1 of the current application. Claim 20 of the '855 application also recites "a motion vector calculation means for obtaining the positional information of said second image data corresponding to said focused data by reading the positional information to said second image data stored in said storage means at a plurality of addresses corresponding to said feature of said focused data and value in the vicinity of said feature, and calculating a motion vector of said focused data by using the positional information of said focused image data and the positional information of said obtained second image data," which reads on "first detecting means for detecting the position information stored at an address corresponding to a feature of a target pixel of a second frame, and second detecting means for detecting a motion vector of the target pixel from the position of the target pixel."

Kondo discloses determining a centroid and detecting a motion vector from the position of the target pixel and the centroid as shown in figure 5.

It would have been obvious to one of ordinary skill in the art at the time of invention to modify claim 16 of the '208 application to include determining the centroid and detecting the motion vector from the position of the target pixel and the centroid for the benefit of reducing the amount of calculation needed for block matching as taught by Kondo in column 1.

Claims 2-3, which have similar elements, are also rejected for these reasons.

This is a provisional obviousness-type double patenting rejection.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Number 7,245,774 issued to Kondo ("Kondo") in view of U.S. Patent Number 4,754,490 issued to Swonger and further in view of U.S. Patent Number 6,625,317 issued to Gaffin et al. ("Gaffin").

For claim 1, Kondo discloses storing means for storing position information of pixels of a first frame that is earlier in time than a second frame (see image memory storing means element 24 of Fig. 5), first detecting means for detecting the position information stored at an address (see Figs. 6A-6C), determining means for determining a centroid of candidate pixels of the first frame which are identified with the position information detected by the position information detected by the first detecting means (see 21 of Fig. 5), and second detecting means for detecting a motion vector of the target pixel from the position of the target pixel and the centroid (see 22 of Fig. 5, see also Figs. 6A, 6B, and 6C).

Kondo does not explicitly disclose that the image memory stores position information of each pixel of a frame at an address corresponding to a feature value that is based on values of the pixel and a plurality of pixels peripheral to the pixel.

Swonger discloses a device where the image memory stores position information of each pixel of a frame at an address corresponding to a feature value that is based on a value of the pixel (abstract, figures 1 and 3, column 1 lines 53-68, column 3 lines 17-27). Although Swonger does not explicitly disclose that the feature is based on the values of the pixel and a plurality of pixels peripheral to the pixel, using these pixels as the feature is well known as being within the ordinary capabilities of a person of ordinary skill in the art at the time of invention as disclosed by Gaffin (abstract, figure 4, column 2 lines 23-22, column 3 lines 36-47).

It would have been obvious to one of ordinary skill in the art at the time of invention to use the pixel position addressable by pixel feature memories of Swonger and Gaffin with the storing means of Kondo because the particular known technique of storing the position of a pixel at an address corresponding to a feature was recognized as part of the ordinary capabilities of one skilled in the art. In this particular case, all the claim elements were known in the prior art and one skilled in the art could have combined the elements with no change in their respective functions, and the combination would have yielded predictable results.

For claim 2, Kondo, Swonger and Gaffin disclose the method of storing (Swonger figure 3, Gaffin figure 4), first detecting (Kondo figures 6A-6C for detecting target pixel, Swonger and Gaffin for retrieving pixel position from feature address), determining



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(Kondo figure 7 step S4), and second detecting (Kondo as performed by the device of Fig. 5 and as shown by the flow diagram of Fig. 7 and discussed in paragraphs 39-47).

For claim 3, Kondo, Swonger and Gaffin disclose a computer program, which, when executed by a processing system, performs the method of storing, first detecting, determining, and second detecting, as shown in Kondo Fig. 34, Swonger figure 3 and Gaffin figure 4.

Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Number 6,058,143 issued to Golin ("Golin") in view of U.S. Patent Number 4,754,490 issued to Swonger and further in view of U.S. Patent Number 6,625,317 issued to Gaffin et al. ("Gaffin").

For claim 1, Golin discloses storing means for storing position information of pixels of a first frame that is earlier in time than a second frame (see element 202 of figure 2 and sequential frames of figure 3), first detecting means for detecting the position information stored at an address (see figure 4), determining means for determining a centroid of candidate pixels of the first frame which are identified with the position information detected by the position information detected by the first detecting means (see column 5 lines 49-57), and second detecting means for detecting a motion vector of the target pixel from the position of the target pixel and the centroid (see column 5 lines 49-57).

Golin does not explicitly disclose that the image memory stores position information of each pixel of a frame at an address corresponding to a feature value that is based on values of the pixel and a plurality of pixels peripheral to the pixel.

Swonger discloses a device where the image memory stores position information of each pixel of a frame at an address corresponding to a feature value that is based on a value of the pixel (abstract, figures 1 and 3, column 1 lines 53-68, column 3 lines 17-27). Although Swonger does not explicitly disclose that the feature is based on the values of the pixel and a plurality of pixels peripheral to the pixel, using these pixels as the feature is well known as being within the ordinary capabilities of a person of ordinary skill in the art at the time of invention as disclosed by Gaffin (abstract, figure 4, column 2 lines 23-22, column 3 lines 36-47).

It would have been obvious to one of ordinary skill in the art at the time of invention to use the pixel position addressable by pixel feature memories of Swonger and Gaffin with the storing means of Golin because the particular known technique of storing the position of a pixel at an address corresponding to a feature was recognized as part of the ordinary capabilities of one skilled in the art. In this particular case, all the claim elements were known in the prior art and one skilled in the art could have combined the elements with no change in their respective functions, and the combination would have yielded predictable results.

For claims 2 and 3, which disclose the elements of claim 1 expressed in method and computer memory forms, these claims are rejected based on Golin, Swonger and Gaffin for the reasons given in the rejection of claim 1, because using the apparatus of

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claim 1 to perform the method of claim 2 or to store a computer program which when executed by a processor performs the method of claim 2 is within the ordinary skill in the art at the time of invention.

### ***Information Disclosure Statement***

The Japanese publication numbers 11-258472, 11-258473, and 11-258474 submitted in the IDS are related to making fiber optic cables. However, the English language translations of Japanese application numbers 11-258472, 11-258473, and 11-258474 are related to storing and determining motion vectors. Presumably applicant meant to submit these applications in the original Japanese. The English language translations have been considered, the original Japanese versions are not part of the record. However, a U.S. Patent that claims foreign priority to Japanese application 11-258474 is entered into the record as U.S. Patent 7,245,774.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent Number 4,776,020 issued to Kosaka et al. discloses a database that stores pixel information at an address corresponding to a feature pattern.

U.S. Patent Number 4,606,065 issued to Beg et al. discloses an acquisition memory that stores the address of a pixel at an address corresponding to a feature.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey S. Smith whose telephone number is 571 270-1235. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on 571 272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JSS  
November 1, 2007

  
JINGGE WU  
SUPERVISORY PATENT EXAMINER

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| Form PTO 1449<br>(Modified)  |    | U.S. DEPARTMENT OF COMMERCE<br>PATENT AND TRADEMARK OFFICE |            | ATTY DOCKET NO.<br>243480US6         |   | SERIAL NO.<br>10/677,537   |                               |
| LIST OF REFERENCES CITED BY APPLICANT  |    |  |            | APPLICANT<br>Tetsujiro KONDO, et al. |   |  |                               |
|  |    |  |            | FILING DATE<br>October 3, 2003       |   | GROUP<br>2624  |                               |
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| <b>U.S. PATENT DOCUMENTS</b>   |    |  |            |                                      |   |  |                               |
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| <b>FOREIGN PATENT DOCUMENTS</b>  |    |  |            |                                      |   |  |                               |
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| <b>OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, etc.)</b>   |    |  |            |                                      |   |  |                               |
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| Examiner                  /Jeffrey Smith/  |    |  |            |                                      | Date Considered                  11/01/2007 |  |                               |
| *Examiner: Initial if reference is considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. |    |  |            |                                      |   |  |                               |